



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,244	02/07/2002	Rebecca A. Jessep	219.40438X00(ATSK)	6575
21186	7590	10/29/2004	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.			LIN, SUN J	
P.O. BOX 2938			ART UNIT	
MINNEAPOLIS, MN 55402			PAPER NUMBER	
			2825	

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/067,244

Applicant(s)

JESSEP ET AL.

Examiner

Sun J Lin

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10,12-18,20-26,28-34 and 36-40 is/are rejected.
- 7) ☒ Claim(s) 3,11,19,27 and 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This office action is in response to application 10/067,244 filed on 02/07/2002. Claims 1 – 40 remain pending in the application.

### ***Arrangement of the Specification***

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections *in order*. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### ***Title Objections***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Abstract Objections***

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Specification Objections***

5. The specification is objected to because of following informalities:

Page 6, line 4, change "210" to —200—.

Page 6, line 11, change "210" to —200—.

Page 7, line 9, delete —being—.

Appropriate correction is required.

### ***Drawing Objections***

6. Drawings are objected to because of following informalities:

Reasons included in "Notice of Draftsperson's Patent Drawing Review" (Form PTO-948) attached with this Office Action.

Fig. 5, adding reference numeral 410 to indicate power ground layer 410 as mentioned in specification page 11, line 2.

Appropriate correction is required.

***Claim Objections***

7. Claims listed below are objected to because of the following informalities:

Claim 1, line 2, after "device" insert **—arrangement—**.

Claim 2, line 1 change "A' to **—The—**.

Claim 3, line 1 change "A' to **—The—**.

Claim 4, line 1 change "A' to **—The—**.

Claim 5, line 1 change "A' to **—The—**.

Claim 6, line 1 change "A' to **—The—**.

Claim 7, line 1 change "A' to **—The—**.

Claim 8, line 1 change "A' to **—The—**.

Claim 9, line 3, delete **—and—**.

Claim 10, line 1 change "Mounted' to **—The mounted—**.

Claim 11, line 1 change "Mounted' to **—The mounted—**.

Claim 12, line 1 change "Mounted' to **—The mounted—**.

Claim 13, line 1 change "Mounted' to **—The mounted—**.

Claim 14, line 1 change "Mounted' to **—The mounted—**.

Claim 15, line 1 change "Mounted' to **—The mounted—**.

Claim 16, line 1 change "Mounted' to **—The mounted—**.

Claim 18, line 1 change "A' to **—The—**.

Claim 19, line 1 change "A' to **—The—**.

Claim 20, line 1 change "A' to **—The—**.

Claim 21, line 1 change "A' to **—The—**.

Claim 22, line 1 change "A' to **—The—**.

Claim 23, line 1 change "A' to **—The—**.

Claim 24, line 1 change "A' to **—The—**.

Claim 26, line 1 change "A' to **—The—**.

Claim 27, line 1 change "A' to **—The—**.

Claim 28, line 1 change "A' to **—The—**.

Claim 29, line 1 change "A' to **—The—**.

Claim 30, line 1 change "A' to **—The—**.

Claim 32, line 1 change "A' to **—The—**.

Claim 34, line 1 change "Mounted' to **—The mounted—**.

Claim 35, line 1 change "Mounted' to **—The mounted—**.

Claim 36, line 1 change "Mounted" to —**The mounted**—.  
Claim 37, line 1 change "Mounted" to —**The mounted**—.  
Claim 38, line 1 change "Mounted" to —**The mounted**—.  
Claim 39, line 1 change "Mounted" to —**The mounted**—.  
Claim 40, line 1 change "Mounted" to —**The mounted**—.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

9. Claims 1, 2, 4 – 10, 12 – 18, 20 – 26, 28 – 34 and 36 – 40 are rejected under 35 U.S.C. 102(e) as being unpatentable over U.S. Patent No. 6,356,448 B1 to DiBene, II et al.

10. As to Claim 1, DiBene, II et al. show and teach the following subject matter:

- A standoff device may be used as a power feed (i.e., electrical device) and spacer in a printed circuit board (PCB) assembly – [Fig. 8; col. 5, line 33 – 43];
- The standoff device 132 comprising a mechanical standoff assembly 132, 216 is used a spacer, which provides/maintains predetermined control of gap (i.e., standoff distance) between PCB 102, PCB 104 and device 108 are mounted together with opposing conductive ball grid array (BGA) patterns 156 – [Fig. 1 – 3; Fig. 10; col. 5, line 36; col. 4, line 32 – 41]; Notice that, as shown in Fig. 2, PCB 104 and device 108 are integrated as an electrical component which

is mounted together with PCB 102 (i.e., another electrical component) with opposing conductive **ball grid array (BGA) patterns156;**

- The standoff device132 comprising an electrical function structure to provide a predetermined power or signal delivery path (i.e., electrical function) from PCB 104 to PCB 102 and device 108 – [Fig. 10; Fig. 11; Fig. 13; col. 5, line 41 – 43; col. 9, line 22 – 56].

For reference purposes, the explanations given above in response to Claim 1 are called **[Response A]** hereinafter.

11. As to Claim 9, in addition to reasons included in **[Response A]** given above, DiBene, II et al. show and teach the following subject matter:

- PCB assembly – [Fig. 1]; Notice that the PCB assembly includes mounted components – PCB 102, device 108, standoff device 132;
- Device 108 and PCB 102 (electrical components) have opposing conductive BGA patterns for electrical connection thereof – [Fig. 1; Fig. 2].

For reference purposes, the explanations given above in response to Claim 9 are called **[Response B]** hereinafter.

12. As to Claim 17, reasons are include in **[Response A]** and **[Response B]** given above.

13. As to Claim 25, in additional to reasons included in **[Response A]** given above, DiBene, II et al. show in Fig. 10 and teach that mechanical standoff (member) 216 is a spacer and it has a predetermined rigid standoff thickness – [Fig. 4].

For reference purposes, the explanations given above in response to Claim 25 are called **[Response C]** hereinafter.

14. As to Claim 33, reasons are included in **[Response A]** and **[Response C]** given above.

15. As to Claim 2, in addition to reasons included in **[Response A]** given above, DiBene, II et al. show and teach the following subject matter:

- Mechanical standoff device arrangement comprises a plurality of rigid standoff pins 132 – [Fig. 2];
- Each rigid standoff pin 216 has a mating relationship with PCB 104 and a distancing control structure to control the standoff distance – [Fig. 10; Fig. 11]; Notice that, as explained in [Response A] PCB 104 and device 108 are integrated as an electrical component.

For reference purposes, the explanations given above in response to Claim 2 are called [Response D] hereinafter.

16. As to Claims 10, 18, 26 and 34, reasons are included in [Response D] given above.

17. As to Claims 4, 12 and 20, DiBene, II et al. teach that the predetermined electrical function is a signal delivery path (i.e., electrical conduction path) to provide a signal delivery path (electrical conduction path) from PCB 104 to PCB 102 and device 108 (i.e., electrical components) – [col. 5, line 31 – 44].

For reference purposes, the explanations given above in response to Claims 4, 12 and 20 are called [Response E] hereinafter.

18. As to Claims 28 and 36, reasons are included in [Response E] given above. Notice that the signal delivery path (electrical conduction path) is a substantially non-resistive electrical path.

19. As to Claims 5, 13, 21, 29 and 37, reasons are included in [Response A] given above.

20. As to Claims 6, 14, 22, 30 and 38, DiBene, II et al. teach that coaxial power circuit (i.e., electrical function structure) of mechanical standoff assembly is composed substantially entirely of metal (i.e., electrical-conductive material) and constructed to have outer standoff 220 and self-expanding threaded standoff 222 which is made of



electrical-conductive material and plastic sleeve 218 which is made of electrical-dielectric material – [Fig. 10; Fig. 11; col. 9, line 21 – 67].

21. As to Claims 7, 15, 23, 31 and 39, DiBene, II et al. teach that standoff may desirable be secured to PCB 104 or PCB 102 by soldering to surface etch prior to joining PCB 102 and PCB 104 to easy assembly – [Col. 8, line 23 – 30; Fig. 4]. Notice that the standoff is soldered to one PCB (electrical component) to provide integrally as part of that PCB.

22. As to Claims 8, 16, 24, 32 and 40, in addition to reasons included in [Response A] given above, DiBene, II et al. teach that spacers/standoffs 132 and fasteners 136 provide for a precision alignment between PCB 102, and PCB 104 and device 108 – [col. 5, line 33 – 35; Fig. 2]. Notice that spacer/standoff 132 and fastener 136 are aligner components to substantially align the opposing conductive BGA patterns of the electrical components during mounting together thereof.

### ***Allowable Subject Matter***

23. Claims 3, 11, 19, 27 and 35 are objected to as being dependent upon a rejected base claim, but they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Those claims are allowed is because the prior art does not teach or fairly suggest the following subject matter:

- At least one pin of a plurality of rigid standoff pins has one of a dumbbell shape and a rolling-pin shape, and where protruding portions of the dumbbell shape and the rolling-pin shape serve to buttress against the electrical components to serve as the distancing control structure to control the standoff distance in combination with other limitations as recited in Claim 3, 11 and 19, respectively;
- At least one pin of a plurality of rigid standoff pins has one of a dumbbell shape and a rolling-pin shape, and where protruding portions of the dumbbell shape and the rolling-pin shape serve to buttress against the electrical

Art Unit: 2825

components to serve as the predetermined rigid standoff thickness to maintain the predetermined distance in combination with other limitations as recited in Claim 27 and 35, respectively;

### **Conclusion**

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sun J. Lin whose telephone number is (571) 272-1899. The examiner can normally be reached on Monday-Friday (9:00AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Sun James Lin  
Patent Examiner  
Art Unit 2825  
October 25, 2004

A handwritten signature in black ink that reads "James Sun Lin". The signature is written in a cursive, flowing style with a large initial "J" and "S".